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Abstract

PROBLEM TO BE SOLVED: To provide a manufacturing method of a small-sized dielectric thin film capacitor having large capacitance and a high breakdown voltage.

SOLUTION: A titanium film 12 deposited by a sputtering method, and a lower part electrode composed of a platinum film 13 are formed on a silicon substrate 11. The surface of the electrode is roughened by a method like mechanical polishing. On the roughened surface, a dielectric film 14 of an ATO film formed by alternately laminating alumina and titania by an atomic layer epitaxy method is deposited. By depositing again a platinum film 15, an upper part electrode is formed.